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Wade C. Patterson

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REINHART BOERNER VAN DEUREN S.C.
ATTN: LINDA KASULKE, DOCKET COORDINATOR
1000 NORTH WATER STREET
SUITE 2100
MILWAUKEE, WI 53202

EXAMINER

LI, SHI K

ART UNIT

PAPER NUMBER

2613

MAIL DATE

DELIVERY MODE

05/02/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/035,750

Applicant(s)

PATTERSON ET AL.

Examiner

Shi K. Li

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-14 and 19-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-14 and 19-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-11, 19-20, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laverty, Jr. et al. (U.S. Patent 5,508,510) in view of Welch et al. (U.S. Patent 5,903,373).

Regarding claims 1 and 4, Laverty, Jr. et al. teaches a system which uses pulsed infrared sensor to control fluid flow. Laverty, Jr. et al. discloses in FIG. 10A infrared transmitter (XMTR) and infrared receiver (RCVR) for transmitting infrared pulses which are reflected by an object within the sensors field of view (see, e.g., col. 6, lines 63-65). Laverty, Jr. et al. teaches in FIG. 10A optional portable remote control device for range and dwell adjustments and detecting battery status of the infrared sensor. Inherently, the infrared sensor changes from normal mode, which is the detection of object for fluid control, to communication mode when the portable remote control device is activated within communication range of the infrared sensor. Laverty, Jr. et al. teaches in col. 2, lines 51 that the communication is a two-way (bidirectional) communication. Laverty, Jr. et al. teaches in col. 13, line 25-col. 14, line 52 operation instructions for using the remote control device. For example, user press TIME or RANGE function to display the current setting. The difference between Laverty, Jr. et al. and the claimed invention is that Laverty, Jr. et al. teaches a portable remote control device while the claimed

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invention is a hand-held device. Welch et al. teaches in col. 1, lines 48-50 that infrared transceivers draw relatively low currents and suitable for hand-held battery-powered devices. One of ordinary skill in the art would have been motivated to combine the teaching of Welch et al. with the system of Lavery, Jr. et al. and design the remote control device as a hand-held device because a hand-held device can be easily carried and used. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to design the remote control device as a hand-held device, as taught by Welch et al., in the system of Lavery, Jr. et al. because a hand-held device can be easily carried and used.

Regarding claim 3, Lavery, Jr. et al. teaches in col. 13, lines 55-64 that after entering security code, the remote unit display battery status. Welch et al. teaches in col. 5, lines 7-9 using broadcast frame for sending signals to a plurality of receivers.

Regarding claims 5-6, Lavery, Jr. et al. teaches in FIG. 10A photodiode.

Regarding claims 7-8, Lavery, Jr. et al. teaches in the abstract that the system is for activate a fluid supply control to control the supply of fluid when the presence of a person or object is detected. Lavery, Jr. et al. teaches in col. 7, lines 17-19 that the presence of a person or object is detected by reflecting ranging pulses.

Regarding claims 9-10, Lavery, Jr. et al. teaches in col. 13, lines 35-36 that when a user press TIME or RANGE function, current setting (operation status) will be displayed.

Regarding claim 11, Lavery, Jr. et al. teaches in col. 14, lines 1-52 programming flush time and range of the impulse flusher.

Regarding claim 19, Lavery, Jr. et al. teaches in FIG. 10A photodiode.

Regarding claim 20, Lavery, Jr. et al. teaches in FIG. 2 LED.

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Regarding claim 22, Laverty, Jr. et al. teaches in col. 13, line 25-col. 14, line 52 operation instructions for using the remote control device to request status, set and program flushing time and sensing range.

Regarding claim 24, Laverty, Jr. et al. teaches in col. 13, lines 52-64 that entering the security code causes the remote unit search status signal and display battery status.

3. Claims 1, 4, 7-11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lange et al. (U.S. Patent 4,916,613) in view of Laverty, Jr. et al. (U.S. Patent 5,769,120).

Regarding claims 1 and 4, Lange et al. discloses in FIG. 1 a system wherein a fixed device 1 communicates with a transmitter and receiver unit 12. Lange et al. teaches in FIG. 1 that device 1 comprises IR transmitter 3 and IR receiver 4. Lange et al. teaches in col. 2, lines 52-60 that transmitter 3 sends pulses which are reflected by a user and detected by receiver 4. Lange et al. teaches in col. 4, lines 4-8 that a communication link can be established by an operator using transmitter and receiver unit 12. The difference between Lange et al. and the claimed invention is that Lange et al. does not teach explicitly that transmitter and receiver unit 12 is a handheld device. However, it is well known in the art that handheld device is suitable for such applications. For example, Laverty, Jr. et al. teaches in FIG. 13 a handheld remote control unit. One of ordinary skill in the art would have been motivated to combine the teaching of Laverty, Jr. et al. with the system of Lange et al. because a handheld device can be carried by an operator for interrogating rinsing systems in different rooms, e.g., in a hotel or office building environment. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a handheld remote control device for interrogating rinsing systems, as taught by Laverty, Jr. et al., in the system of Lange et al. because a handheld device can be

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carried by an operator for interrogating rinsing systems in different rooms, e.g., in a hotel or office building environment.

Regarding claims 7-8, Lang et al. teaches in col. 2, lines 52-54 that the system can serve as a hand rinsing system which operates upon the receipt of reflected ranging pulses.

Regarding claim 9-10, Lange et al. teaches in col. 2, lines 3-7 that the control unit interrogates state of the battery.

Regarding claim 11, Lange et al. teaches in col. 2, line 57 that the transmitter and receiver unit is used for programming.

Regarding claim 13, Lange et al. suggests in col. 1, lines 30-35 that the transmitter sends sequence of pulses.

4. Claims 12 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laverty, Jr. et al. and Welch et al. as applied to claims 1, 3-11, 19-20, 22 and 24 above, and further in view of Foster (U.S. Patent 6,125,482) and Sano (6,690,887 B1).

Laverty, Jr. et al. and Welch et al. have been discussed above in regard to claims 1, 3-11, 19-20, 22 and 24. The difference between Laverty, Jr. et al. and Welch et al. and the claimed invention is that Laverty, Jr. et al. and Welch et al. do not teach providing past operation over the communication link. Foster teaches in col. 9, lines 48-50 to transfer hand wash count data stored in EEPROM to handheld computer 119. Foster suggests in FIG. 10 to use a cable for connecting the handheld computer and the hand wash station. However, it is well known in the art that any communication link, including infrared wireless link, can be used for such data transferring. For example, Sano teaches in FIG. 1A and FIG. 1B infrared wireless communication between devices 10 and 11. One of ordinary skill in the art would have been motivated to combine the

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teaching of Foster and Sano with the modified system of Lavery, Jr. et al. and Welch et al. because usage data provides information for scheduling other operations such as cleaning the sink and refilling soap dispenser. One of ordinary skill in the art would have been motivated to use a infra wireless communication link for this purpose because such a link is also exist in the modified system of Lavery, Jr. et al. and Welch et al. Wireless link also is convenient to the users because it eliminates the extra weight and space of the cable. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the communication link in the modified system of Lavery, Jr. et al. and Welch et al. for transferring past operation information, as taught by Foster, because usage data provides information for scheduling other operations such as cleaning the sink and refilling soap dispenser.

Regarding claim 21, Foster teaches in col. 7, lines 65-67 that operation range is adjusted by adjusting threshold.

5. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lavery, Jr. et al. and Welch et al. as applied to claims 1, 3-11, 19-20, 22 and 24 above, and further in view of admission (admitted prior art).

Lavery, Jr. et al. has been discussed above in regard to claims 1, 3-11, 19-20, 22 and 24. The difference between Lavery, Jr. et al. and Welch et al. and the claimed invention is that Lavery, Jr. et al. and Welch et al. do not teach the repetition rate. Instance specification admits on page 4, first paragraph that IrDA compliant device emits pulse every 250 milliseconds, i.e., a repetition rate of 4 Hz. One of ordinary skill in the art would have been motivated to combine the teaching of admission with the modified system of Lavery, Jr. et al. and Welch et al. because a repetition rate of 4 Hz is compliant with IrDA standard and has high compatibility with other

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infrared communication based products. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a repetition rate of 4 Hz, as taught by admission, in the modified system of Laverty, Jr. et al. and Welch et al. because a repetition rate of 4 Hz is compliant with IrDA standard and has high compatibility with other infrared communication based products.

6. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lange et al. and Laverty, Jr. et al. as applied to claims 1, 4, 7-11 and 13 above, and further in view of Powell (U.S. Patent 7,106,174 B1).

Lange et al. and Laverty, Jr. et al. have been discussed above in regard to claims 1, 4, 7-11 and 13. Lange et al. teaches in col. 4, lines 50-51 pulse table 23 for storing different pulses, such as control pulse, detection pulse and test pulse. That is, the control pulse has different shape from the detection pulse. It is obvious to choose a control pulse with greater duration than the detection pulse as a design choice. To further strengthen the rejection, the Examiner cites Powell for teaching different pulse duration for representing different signals. Powell teaches in col. 3, lines 9-10 that pulse characteristics such as duration can be used to represent different signals. Instant specification admits that "those skilled in the art will recognize various ways that the Attention Signal can be formatted to accomplish this indication". Therefore, the use of a longer duration for the Attention signal is well known in the art and obvious. The obviousness is based on a recognition that the claimed difference exist not as a result of an attempt by applicant to solve a problem but merely amounts to selection of expedients known to the artisan of ordinary skill as design choices.

Response to Arguments

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7. Applicant's arguments filed 2 February 2007 have been fully considered but they are not persuasive.

In response to applicant's argument that Lavery I and Welch are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Lavery I is reasonably pertinent to the instant application because it is an invention for infrared remote control of solenoid flush valve; Welch is classed in U.S. Pat. Class 398/128 (see PTO-892 mailed 16 January 2007), therefore, it is analogous art.

In response to applicant's argument that there is insufficient motivation to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, one of ordinary skill in the art would have been motivated to combine the teaching of Welch et al. with the system of Lavery, Jr. et al. and design the remote control device as a hand-held device because a hand-held device can be easily carried and used. The Applicant argues that this is a circular reasoning at best and comments that by this reasoning, everything should be hand-held. In fact, this is the trend for a lot of devices, e.g., walkman

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(Registered Trademark of Sony Corporation), iPod, MP3 players, cameras and computers. Of course, not everything can be made or is desirable to be hand-held.

In response to applicant's argument that applying Welch to Lavery would result in hard-wiring each of the remote water faucets to a central computer or hard wiring an IR transceiver for each device to the central computer, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

The Applicant argues that Lavery II does not teach a handheld device, but only a "remote control device" and a text search of Lavery II shows that Lavery does not include the word "handheld". It is true that Lavery II does not use the word "hand-held", however, Lavery II teaches in col. 51, line 2 "hand-held two-way communication device". The phrase "hand-held" is similar to handheld.

The Applicant request a reference for teach infrared wireless links. The Examiner includes Sano (6,690,887 B1) in the rejection of claims 12 and 21.

Conclusion

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 571 272-3031. The examiner can normally be reached on Monday-Friday (7:30 a.m. - 4:30 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

skl
24 April 2007



SHI K. LI
PRIMARY PATENT EXAMINER